

Listing of Claims

Claim 1 (Currently Amended): A method of recovering a catalytic metal from a catalytic metal colloid containing composition comprising:

a) rinsing a substrate of catalytic metal colloid to form a composition comprising a catalytic metal colloid; then

b) passing the composition comprising the catalytic metal colloid through a filter to concentrate the catalytic metal colloid on the filter; then

~~—— a) —— concentrating the catalytic metal colloid on a filter; then~~

b) c) removing the catalytic metal of the catalytic metal colloid from the filter with an oxidizer; and then

e) d) collecting the catalytic metal.

Claim 2 (Original): The method of claim 1, wherein the oxidizer is an acid solution.

Claim 3 (Original): The method of claim 2, wherein the acid comprises nitric acid, sulfuric acid, hydrochloric acid, acetic acid or mixtures thereof.

Claim 4 (Original): The method of claim 2, wherein the acid solution comprises hydrogen peroxide.

Claim 5 (Currently Amended): The method of claim 1, wherein the catalytic metal colloid comprises catalytic metal and non-catalytic metal and a weight ratio of the non-catalytic metal to the catalytic metal of the colloid is reduced to from about 40% to about 95% of the weight ratio after filtering the composition.

Claim 6 (Original): The method of claim 1, wherein the filter entraps at least about 65% by weight of the catalytic metal colloid in the composition.

Claim 7 (Original): The method of claim 6, wherein the filter entraps from about 75% to about 95% by weight of the catalytic metal colloid in the composition.

Claim 8 (Original): The method of claim 5, wherein the non-catalytic metal colloid component comprises tin.

Claim 9 (Original): The method of claim 1, wherein the catalytic metal comprises copper, beryllium, aluminum, tungsten, tellurium, nickel, silver, germanium, molybdenum, selenium, rhodium, osmium, iridium, ruthenium, lead, magnesium, gold, platinum, palladium, or mixtures thereof.

Claim 10 (Original): The method of claim 9, wherein the catalytic metal comprises gold, rhodium, platinum or palladium.

Claim 11 (Original): The method of claim 1, wherein the filter comprises a thermoplastic polymer, hydrophilic material, activated carbon, silica gel, alumina, silica-alumina, silicon carbide, zirconium silicate, diatomaceous earth, or mixtures thereof.

Claim 12 (Original): The method of claim 11, wherein the thermoplastic polymer comprises polyolefins, polyamides, polyesters, polycarbonate, polystyrene, thermoplastic elastomers or blends and copolymers thereof.

Claim 13 (Canceled)

Claim 14 (Currently Amended): The method of claim 1, wherein the catalytic metal colloid containing composition ~~comprises~~ is an aqueous rinse or dragout bath ~~from a printed circuit board~~.

Claim 15 (Original): The method of claim 14, wherein the catalytic metal colloid comprises from about 0.0001% by weight to about 0.05% by weight of the composition.

Claim 16 (Original): The method of claim 1, wherein the catalytic metal is collected on an adsorbent.

Claim 17 (Original): The method of claim 16, wherein the adsorbent comprises a nonionic acrylic based amine-borane reducing resin, a nonionic polystyrene based amine-borane resin, a nonionic acrylic based phosphine-borane resin, a nonionic polystyrene based phosphine-borane resin, a lipophilic thiocrown ether, a thiocrown ether carboxylic acid, thiocrown polyacrylamide,

thiacrown polyacrylic acid, thiacrown polyhydroxypropylacrylate, chiral crown ethers, diaza crown ethers, or mixtures thereof.

Claim 18 (Original): The method of claim 17, wherein the adsorbent comprises activated carbon, alumina, silica-alumina, silicon carbide, zirconium silicate, diatomaceous earth or silica gel.

Claim 19 (Original): The method of claim 16, further comprising the step of burning the adsorbent to recover the catalytic metal.

Claim 20 (Original): A method of recovering palladium metal from a tin/palladium catalytic metal colloid containing composition comprising:

- a) concentrating the tin/palladium catalytic metal colloid on a filter; then
- b) removing the palladium metal of the tin/palladium catalytic metal of the catalytic metal colloid from the filter with an oxidizer solution, the oxidizer solution comprising nitric acid, sulfuric acid, hydrochloric acid or mixtures thereof and hydrogen peroxide; then
- c) collecting the palladium metal on an adsorbent, the adsorbent comprising an amine borane resin or a thiacrown ether; and then
- d) burning the adsorbent with the palladium metal to recover the palladium metal.